

Listing of the Claims

1. (Currently Amended) A data processing unit (3) for registering a first image (~~A1~~) and a second image (~~A2~~) of an object (~~2~~), the data processing unit (3) being set up to:
 - segment the images (~~A1, A2~~) automatically into various object constituents (~~a, b, c~~);
 - register only those image areas (~~B1, B2~~) of selected object constituents (~~b~~) which are relevant to a predetermined task.
2. (Currently Amended) A data processing unit (3) for registering a first image (~~A1~~) and a second image (~~A2~~) of an object (~~2~~), in particular a data processing unit (3) as claimed in claim 1, which is set up to:
 - segment the images (~~A1, A2~~) automatically into various object constituents (~~a, b, c~~);
 - register the image areas (~~B1, B2~~) of various object constituents (~~a, b, c~~) using individually assigned registration methods.
3. (Currently Amended) A data processing unit as claimed in claim 1 ~~or 2~~, ~~characterized in that wherein~~ the segmented object constituents (~~a, b, c~~) are automatically classified.
4. (Currently Amended) A data processing unit as claimed in claim 1 ~~or 2~~, ~~characterized in that wherein~~ a linear registration is performed on several resolution levels, rigid bodies being registered on a coarse grid followed by affine registration on a finer grid.
5. (Currently Amended) A data processing unit as claimed in claim 1 ~~or 2~~, ~~characterized in that wherein~~ the first image (~~A1~~) and/or the second image (~~A2~~) are/is (a) two- or three-dimensional computer tomogram(s), in particular an X-ray photograph or a magnetic resonance image.

6. (Currently Amended) A data processing unit as claimed in claim 1-~~or 2~~, ~~characterized in that wherein~~ the object is the chest (2) of a patient, the lungs (b) being the object constituent relevant to a tumor diagnosis.

7. (Currently Amended) A data processing unit as claimed in claim 1-~~or 2~~, ~~characterized in that wherein~~ the segmentation is performed using a watershed transformation.

8. (Currently Amended) An examination apparatus, comprising:
 - an imaging device (1) for producing images (A1, A2) of an object (2);
 - a data processing unit (3) as claimed in ~~any one of the claims 1 to 7~~, coupled to the imaging device (1).

9. (Currently Amended) A method for registering a first image (A1) and a second image (A2) of an object (2), comprising the following steps:
 - automatic segmentation of the images (A1, A2) into various object constituents (a, b, c);
 - registration of the image areas (B1, B2) of selected object constituents (b) relevant to a predetermined task.

10. (Currently Amended) A method for registering a first image (A1) and a second image (A2) of an object (2), comprising the following steps:
 - automatic segmentation of the images (A1, A2) into various object constituents (a, b, c);
 - registration of the image areas (B1, B2) of various object constituents (a, b, c) using individually assigned registration methods.